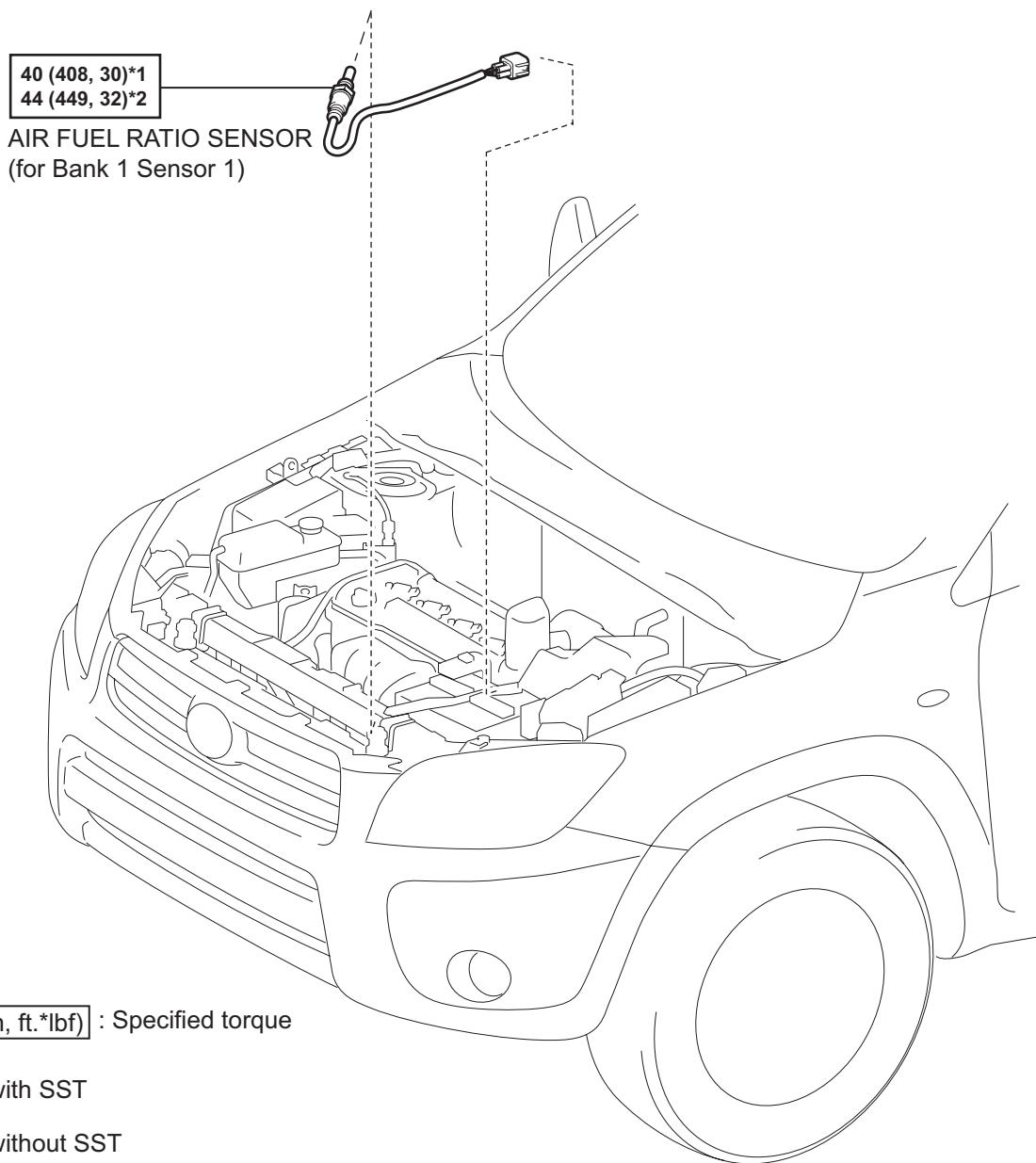
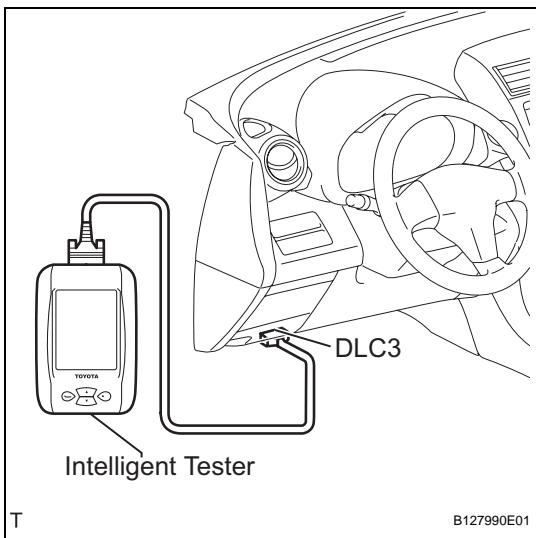


# AIR FUEL RATIO SENSOR

## COMPONENTS





## ON-VEHICLE INSPECTION

### 1. CHECK AIR FUEL RATIO COMPENSATION SYSTEM

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch ON.
- Select the following menu items: Data List / A/FS B1 S1 and O2S B1 S2.
- Warm up the A/F sensor with the engine speed at 2,500 rpm for approximately 2 minutes.
- Keep the engine speed at 2,500 rpm and confirm that the display of "A/FS B1 S1" is as shown in the illustration.

HINT:

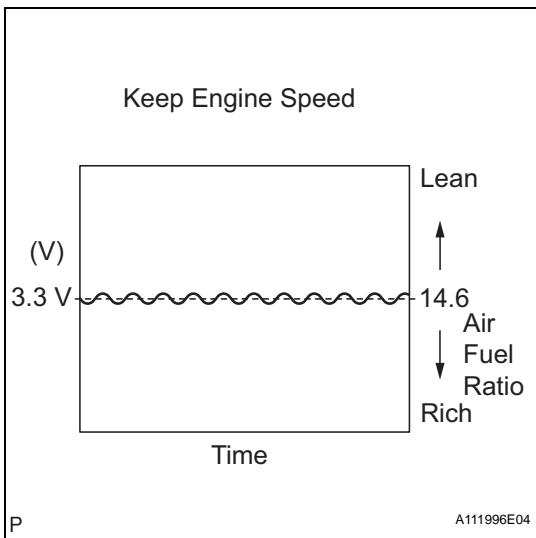
- The illustration may slightly differ from the display on the intelligent tester.
- Only the intelligent tester displays the waveform of the A/F sensor.

- Confirm that the display of "O2S B1 S2" changes between 0 to 1 V with the engine speed at 2,500 rpm.

OK:

**The voltage output oscillates more than 8 times in 10 seconds.**

EC



NOTICE:

- Perform the check immediately after warming the engine up.
- If the voltage variation could not be verified, warm up the A/F sensor again. If it could not be verified even after warming up the sensor again, check for DTCs (see page [ES-292](#)).

## REMOVAL

## 1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

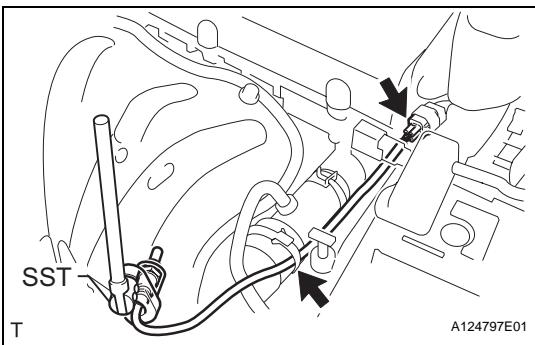
## **CAUTION:**

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

## 2. REMOVE AIR FUEL RATIO SENSOR (for Bank 1 Sensor 1)

- (a) Disconnect the sensor connector.
- (b) Using SST, remove the sensor from the exhaust manifold.

**SST 09224-00010**



## INSPECTION

## 1. INSPECT AIR FUEL RATIO SENSOR (for Bank 1 Sensor 1)

(a) Measure the resistance of the sensor.  
**Standard resistance**

Tester Connection	Specified Condition
1 (HA1A) - 2 (+B)	1.8 to 3.4 $\Omega$ at 20°C (68°F)
1 (HA1A) - 4 (A1A-)	10 k $\Omega$ or higher

If the resistance is not as specified, replace the sensor.

## INSTALLATION

## 1. INSTALL AIR FUEL RATIO SENSOR (for Bank 1 Sensor 1)

(a) Using SST, install the sensor to the exhaust manifold.

**SST 09224-00010**

**Torque: 40 N·m (408 kgf·cm, 30 ft.·lbf) for use with SST**

**44 N\*m (449 kgf\*cm, 32 ft.\*lbf) for use without SST**

## HINT:

- Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).
- Make sure SST and wrench are connected in a straight line

(b) Connect the sensor connector

## 2. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

### 3 CHECK FOR EXHAUST GAS LEAKS